What is claimed is:

1. An image rejection mixer which comprises:

distribution means supplied with local signals having a phase difference in order to distribute said local signals;

5   first and second mixing means for mixing the distributed local signals and RF signals having phases different from those of said distributed local signals and for outputting respective IF current signals;

first and second phase shift means for generating a 90 degree

10   phase difference between said respective IF current signals; and

addition means for adding the phase shifted respective IF current signals,

wherein image signals are removed from said respective RF

15   signals.

2. The image rejection mixer according to claim 1, wherein said phase shift means comprises a lattice circuit having inductors and resistors.

3. The image rejection mixer according to claim 1, wherein

20   said addition means comprises a feedback loop, and adds said IF current signals.

4. The image rejection mixer according to claim 1, wherein said feedback loop is a feedback loop of positive feedback.

5. The image rejection mixer according to claim 1, wherein

25   said addition means comprises a differential amplifier.

6. The image rejection mixer according to claim 1, which further comprises:

a first impedance between said first mixing means and first phase shift means ; and

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a second impedance between said second mixing means and second phase shift means.

7. The image rejection mixer according to claim 6, wherein said impedances comprises a resistor, a capacitor, or an inductor or an arbitrary combination of them.

8. The image rejection mixer according to claim 7, wherein values of said impedances are determined on the basis of a phase difference between said IF current signal outputted from said first mixing means and said IF current signal outputted from said second mixing means.

9. A receiver including an image rejection mixer which comprises:

receiving means for receiving RF frequency signals having a phase difference; and

an image rejection mixer including:

distribution means supplied with local signals having a phase difference in order to distribute said local signals;

first and second mixing means for mixing the distributed local signals and said RF signals having phases different from those of said distributed local signals and for outputting respective IF current signals;

first and second phase shift means for generating a 90 degree phase difference between said respective IF current signals; and

addition means for adding the phase shifted respective IF current signals,

wherein image signals are removed by said image rejection mixer from said respective RF signals received by said receiving means.